Knowledge and Attitude of Pulmonary Tuberculosis Patients Attending Bharatpur Dots Centre, Chitwan
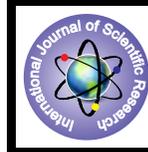
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ABSTRACT *Pulmonary Tuberculosis is an infectious bacterial disease caused by Mycobacterium Tuberculosis which is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory diseases. This study is designed to find out the Pulmonary Tuberculosis patients' knowledge and attitude on PTB and treatment.A descriptive, cross-sectional research design was used for the study. Total 50 PTB patients attending at Bharatpur DOTS Centre and willing to participate in the study were selected by using probability simple random sampling technique. A semi-structured interview schedule was used to collect the data. Data was analyzed by using SPSS and descriptive, inferential test and William's test was applied.The study findings revealed that 34% of the respondents belonged to the age group 18-27 years, 74% of the respondents were in treatment category 'New' and 58% were in continuous phase. Fifty eight percentage of the respondents had low level of knowledge and the level of knowledge of respondents was statistically significant with educational level (p=0.001) and marital status (p=0.027). There was strong positive correlation (r=0.709and p-value<0.001) between knowledge and attitude of the respondents. The difference in correlation coefficient was significant for the sex.This study showed that knowledge was low in several domains like cause, mode of transmission, duration of treatment and prevention of PTB. So, health education should be targeted towards these patients to increase their knowledge.*

Introduction or Background

Tuberculosis or TB is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory diseases.[1]

Tuberculosis remains a major global health problem. It causes ill-health among millions of people each year especially in Asia and Africa and ranks as the second leading cause of death from an infectious disease worldwide, after the human immunodeficiency virus (HIV). The latest estimates included in the report are that there were almost 9 million new cases in 2011 and 1.4 million TB deaths.[2]

Need for the Study

TB has always been a major public health problem in Nepal, causing a significant burden of morbidity and mortality. In Nepal, 40,000 people develop tuberculosis every year. It is estimated that about 60,000-70,000 people die from Tuberculosis every year. That is nearly 125 deaths every week or about 18 deaths each day.[3]

A number of factors are responsible for this devastating health problem which includes noncompliance with control programs, inadequate diagnosis and treatment, increasing migration due to natural and men made disasters and emerging epidemic of HIV/AIDS. All these are fueled by population explosion, rising number of multi resistance tuberculosis, drug abusers and refugees, poor socio-economic conditions and lack of knowledge and awareness about tuberculosis.[4]

A study done in DOTS centre of Dharan showed that due to lack of knowledge and awareness about tuberculosis, many patients were stigmatized. Efforts should be made to educate the public about tuberculosis to reduce stigma experienced by tuberculosis patients and improve the compliance of the patient.[5]

Materials and Methods

A descriptive, cross-sectional research design was conducted from 27th Oct to 10th Nov, 2013 among the 50 pulmonary tuberculosis patients who were under treatment at Bharatpur DOTS centre, Chitwan. Probability simple random sampling with replacement using lottery method was used to collect the data. Semi-structured interview schedule was used to measure knowledge of the respondents and 5 points Likert scale was used to measure attitude of the respondents. All collected data was entered in electronic SPSS version 17 and then analyzed and interpreted in terms of descriptive statistics (frequency, mean, percentage, etc.), inferential statistics (chi square test and fisher's exact test were used as appropriate). Pearson's correlation coefficient was used to identify the correlation between knowledge and attitude. Statistical significance of the correlation coefficient was assessed using the p-value. Similarly, correlation coefficient was also measured across the background characteristics. Statistical significance of difference in correlation coefficients was also assessed using p-value by William's test.[6]

Results

Table 1: Respondents' Socio-Demographic Characteristics

Variables (n)	Frequency	Percentage
Age group in years(n=50)		
<18	1	2.0
18-27	17	34.0
28-37	12	24.0
38-47	5	10.0
48-57	10	20.0
58-67	3	6.0
>67	2	4.0
Sex(n=50)		
Male	28	56.0
Female	22	44.0
Marital status(n=50)		
Married	37	74.0
Unmarried	13	26.0
Educational status (n=50)		
Illiterate	9	18.0
Literate	41	82.0
If yes, educational level (n=41)		
Upto primary	16	39.1
Secondary and above	25	60.9
Family history of PTB(n=50)		
Yes	22	44.0
No	28	56.0
Treatment category (n=50)		
New	37	74.0
Relapse	6	12.0
Treatment after failure	1	2.0
Treatment after default	2	4.0
Transfer In	0	0.0
Others	4	8.0
Treatment phase(n=50)		
Intensive	21	42.0
Continuous	29	58.0

** Multiple responses

The analysis of the demographic variables revealed that 34.0% respondents belonged to the age group between 18-27 years, 56.0% respondents were male, 74.0% were married and 82.0% respondents were literate. Among the literate, 60.9% had at least secondary or higher than secondary education. Fifty six percent respondents had no family history of PTB. Concerning treatment category, 74.0% respondents were in treatment category 'New' and 58.0% respondents were in continuous phase.

Table 2: Respondents' Knowledge on Cause, Mode of Transmission, Side Effects of Medicines and Prevention of PTB (n=50)

Variables	Frequency	Percentage
Cause(n=50)		
Sin	0	0.0
Cold weather	5	10.0
Bacteria*	25	50.0
Hard work	20	40.0
Mode of transmission(n=50)		
Through handshakes	0	0.0
Through sharing dishes and utensils	18	36.0
Through the air when a person with PTB coughs or sneezes*	32	64.0
Through touching items in public places (doorknobs, handles in transportation)	0	0.0
Duration of treatment (n=50)		
6-8 months*	36	72.0
8-10 months	14	28.0
10-12 months	0	0.0
12-14 months	0	0.0
PTB can be prevented (n=50)		
Yes*	46	92.0
No	4	8.0
If yes, ways of prevention** (n=46)		
Avoid shaking hands	12	26.1
Covering mouth when coughing and sneezing*	46	100.0
Avoiding repeated close contact (within 6" of infected person's mouth)*	19	41.3
Avoid sharing dishes and utensils	29	63.0
Through vaccination*	15	32.6
Ventilating the house*	15	32.6

*Correct response **Multiple response

Table 2 indicates that out of 50 respondents, half of the respondents 25 (50.0%) answered bacteria as the cause of pulmonary tuberculosis and 5 (10%) answered cold weather. With regard to mode of transmission, 32 (64.0%) respondents answered PTB can be transmitted through the air when a person with PTB coughs or sneezes and remaining respondents 18 (36.0%) answered through sharing dishes and utensils. With regard to duration of treatment of PTB, 36 (72.0%) respondents answered 6-8 months and remaining 14 (28%) respondents mentioned 8-10 months. Forty six (92.0%) respondents mentioned PTB as a preventable disease and 4 (8%) respondents mentioned as not preventable. Among 46 respondents who mentioned PTB as preventable, cent percent respondents said PTB can be prevented from transmitting to other persons through covering mouth when coughing and sneezing and 15 (32.6%) respondents each mentioned vaccination and ventilating the house as means of prevention of PTB.

Table 3: Association between Respondents' Level of Knowledge and Selected Demographic Variables
n=50

Variables	Level of Knowledge		p-value
	Low (%)	High (%)	
Marital status [f]			
Married	25 (67.6)	12 (32.4)	0.027
Unmarried	4 (30.8)	9 (69.2)	
Educational level			
Up to primary	13 (81.2)	3 (18.8)	0.001
Secondary education and above	7 (28.0)	18 (72.0)	
Family history of PTB			
Yes	14 (63.6)	8 (36.4)	0.569
No	15 (53.6)	13 (46.4)	
Treatment phase			
Intensive	13 (61.9)	8 (38.1)	0.427
Continuous	16 (55.2)	13 (44.8)	

Significance level at 0.05   [f]=Fisher's exact test $\chi 2$ is computed for p-value

Table 3 indicates that the level of knowledge on PTB and treatment is statistically significant (p=0.027) with marital status and (p=<0.001) with educational level of the respondents.

Table 4: Correlation between Knowledge Score and Attitude Score
n=50

Variables	Karl Pearson Correlation Coefficient (r)	p-value
Knowledge Attitude	0.709	<0.001

Figure 1: Correlation between Knowledge Score and Attitude Score of Respondents

Figure 2 indicates that, when knowledge scores of the respondents increases, attitude score also increases. This shows that the respondents with low knowledge score had unfavorable attitude and respondents with high knowledge score had favorable attitude. Since both knowledge and attitude score increase and decrease at the same time there exists positive relationship between them.

Table 5: Correlation coefficient between knowledge and attitude across the background characteristics

Variables (n)	Karl Pearson Correlation Coefficient (p-value)	p-value
Sex Male (28) Female (22)	0.515 (0.005) 0.856 (<0.001)	0.019
Marital status Married (37) Unmarried (13)	0.677 (<0.001) 0.590 (0.034)	0.685
Educational status (n=50) Illiterate (9) Literate (41)	0.413 (0.270) 0.705 (<0.001)	0.319
If yes, educational level (n=41) Up to primary (16) Secondary and above (25)	0.627 (0.009) 0.622 (0.001)	0.981
Family history of PTB Yes (22) No (28)	0.759 (<0.001) 0.663 (<0.001)	0.520
Treatment phase Intensive (21) Continuous (29)	0.648 (0.001) 0.735 (<0.001)	0.584

Significance level at 0.05
p-value[1] represents difference in correlation coefficients between two independent groups

The difference in correlation coefficients is significant for the sex and is insignificant for marital status, educational status, educational level, paid employment, family history of PTB and treatment phase.

DISCUSSION

The findings of the study revealed that there is lack of awareness among PTB patients regarding cause, mode of transmission, side effects of medicines and prevention of PTB. Concerning the etiology, 50% respondents had knowledge on the cause of PTB which is supported by the findings of the study by Khalil et al. (2011) which showed that 47.7% respondents had knowledge about the cause of PTB.[7] This may be due to health education materials aimed for general public focuses mainly on route of transmission and prevention measure.

Regarding mode of transmission, 64% had knowledge PTB can be transmitted through the air when a person with PTB coughs or sneezes, which is supported by the study by the findings of the study by Tasnim et al. (2012) which showed that 56% had knowledge that it could be transmitted through sneezing/coughing.[8] Ignorance of the facts that the disease is an airborne and contagious has the consequence of increasing transmission of the disease. As a result of this ignorance patients will not care of adopting control measures in their households and workplace.

Seventy two percent respondents had knowledge regarding duration of treatment of PTB as 6-8 months. This finding is supported by the findings of the study by Bhatt et al. (2010) which showed that 82% respondents mentioned correct duration of treatment.[9] This point is serious, as patients who did not know the total duration of treatment might at any stage of treatment stop taking the drugs. This interruption results in emergence of drug resistance to anti-TB drug.

Concerning side effect of the medicine, 84% respondents had knowledge of fatigue which is inconsistent with the findings of the study by Sukumaran et al. (2002) which showed that 63% respondents revealed fatigue as the side effect of medicine.[10]

Among 46 respondents who said PTB as preventable, cent percent had knowledge of covering mouth when coughing and sneezing, 32.6% respondents had knowledge of vaccine BCG and 32.6% had knowledge of ventilating the house as a method to prevent PTB from being transmitted. These findings are in consistent with the findings of the study by Omotowo et al. (2012) which showed that 67% respondents said TB patients to close mouth when coughing, 57.5% said through immunization with BCG and 57.2% said through natural ventilation.[11] This lack of knowledge about preventive measures is the main cause of PTB occurrence as people do not adapt any measures to prevent the disease from spreading. This leads to increasing number of PTB susceptible in home and the community.

There is strong positive correlation between knowledge and attitude (r=0.709, p<0.001) of the respondents which is supported by the study by Mweemba et al. (2008) which showed that there was a significant positive correlation between knowledge and attitude (r=0.25, p=0.005).[12] The correlation between knowledge and attitude is stronger among females as compared to males. This shows that the educational packages and programs should focus more on behavior change in males. Illiteracy is considered as one of the risk factors for occurrence of PTB. This is supported by the findings of the studies by Berhe et al. (2013) and Muhammad et al. (2014) which showed illiteracy as risk factors for pulmonary tuberculosis.[13,14] Despite this evidence the difference in correlation coefficient is markedly different across the educational status. However, the statistical significance was not observed. This might be due to the fact that very few (nine) number of illiterate study units were included.

CONCLUSION

The findings of the study revealed that knowledge on PTB and treatment is low among the respondents and attitude is also unfavorable among half of the respondents. So, health education should be targeted towards these patients to increase their knowledge and efforts should be made to educate the patient and their caretakers or family members about PTB and improve their compliance. Health service providers should give continuous health information regarding TB for patients and their care takers at TB clinic not only at the start of treatment but throughout the duration of treatment.

ACKNOWLEDGEMENT

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